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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,177	12/05/2001	Junji Komeno	Q67579	2265
7590 04/06/2004				
SUGHRUE MION, PLLC 2100 Pennsylvania Avenue, NW Washington, DC 20037-3213		EXAMINER KACKAR, RAM N		
		ART UNIT 1763		

DATE MAILED: 04/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/002,177	Applicant(s) KOMENO ET AL.	
	Examiner Ram N Kackar	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19- 27 and 30 is/are pending in the application.
- 4a) Of the above claim(s) is/are withdrawn from consideration.
- 5) ☐ Claim(s) is/are allowed.
- 6) ☒ Claim(s) 19-27 and 30 is/are rejected.
- 7) ☐ Claim(s) is/are objected to.
- 8) ☐ Claim(s) are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. <u> </u> |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u> </u> | 6) <input type="checkbox"/> Other: <u> </u> |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claim 19-27 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In this instance the newly added limitation in claim 19 that an area immediately above and below a center of said susceptor is unoccupied is not supported by the specification and/or drawing. In fact Fig 4 of the application discloses TC (temperature control mechanism) just above the center of the susceptor CA.

In claim 30 the limitation of an unfilled hole through its center is also not disclosed in the specification.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 19- 24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art (AAPA) in view of Yasuki Nakao (JP 03069119) and Ryoza Sato (JP 03171616).

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AAPA discloses a MOCVD film forming device with a susceptor in the form of a disk, a base plate positioned below the susceptor and rotatably retaining the susceptor and rotating means for the susceptor, rotating means for the substrate, the substrate film forming plane facing downwards and two temperature control devices (Fig 5).

AAPA does not disclose the specific rotation means for the substrate and the susceptor.

Yasuki Nakao discloses for a film-processing device a rotation generating section for substrates (Fig 2 - 4) through the susceptor, stationary gear and drive (revolution input section) for the susceptor. Yasuki Nakao does not disclose the drive for the susceptor at its periphery and bearing between the base plate and rotating susceptor.

Ryozo Sato discloses drive for the susceptor at the periphery (Fig 1-21) and the bearing between the base plate and rotating susceptor (Fig 1-14) and unoccupied region above and below the center.

Therefore it would have been obvious for one of ordinary skill in the art at the time invention was made to have a drive (spur gear type) at the periphery of the device of Yasuki Nakao so as to have a compact susceptor with low profile and have space for temperature control above the substrates as in Ryozo Sato.

Claim 27 is directed to an intended use. However the intended use is supported by the disclosure.

4. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art in view of Yasuki Nakao (JP 03069119) and Ryozo Sato (JP 03171616) as applied to claim 2 and further in view of John S. Wollam (US 3783822).

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Ryozo Sato discloses some parts of the susceptor made of carbon (Fig 1-31) but do not disclose gears and bearings to be made of carbon.

John S. Wollam discloses moving parts made of carbon (Col 2 lines 24-29).

As carbon graphite is stable at high temperature it would have been obvious to use bearings and drive gears of carbon also for their strength, toughness and ability to with stand high temperature.

5. Claims 26 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants admitted prior art in view of Yasuki Nakao (JP 03069119) and Ryozo Sato (JP 03171616) as applied to claim 1 and further in view of Bryan D Schmidt (US 5343938).

Yasuki Nakao or Ryozo Sato do not disclose an opening at the center portion.

Bryan D Schmidt discloses opening at the central portion closed by a material of the susceptor for the purpose of controlling thermal conductivity and in turn uniformity (Fig 1- 23).

The opening may also be left open for provision of a thermal choke for temperature uniformity.

Therefore it would have been obvious for one of ordinary skill in the art at the time invention was made to have an opening in the susceptor covered by carbon or left open so as to improve thermal uniformity.

Response to Amendment

Applicant's arguments filed 1/23/2004 have been fully considered but they are not persuasive.

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Applicant argues that the newly added limitation of the susceptor center being unoccupied distinguishes over prior art as cited prior art reference of Ryoze Sato does not disclose this feature.

This is incorrect since Ryoze Sato does disclose unoccupied center at top and bottom as the heating control mechanism is isolated by a divider plate 4 as in Fig 1.

On the other hand this feature is not disclosed by the invention as discussed above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 571 272 1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RK

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GREGORY MILLS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700